

Remarks

The Applicants note with appreciation the withdrawal of the previous rejections.

The Applicants have amended Claim 29 to include the subject matter of Claim 31. Claim 31 has been cancelled.

Claim 39 now stands rejected under 35 U.S.C. §102 as being anticipated by the newly cited Kato publication. The Applicants nonetheless respectfully submit that Kato is inapplicable to Claim 39. Reasons are set forth below.

Claim 39, among other things, recites that the artificial leather sheet contains ultra-fine fibers “at least substantially all of which are entangled with each other.” The Applicants respectfully submit that Kato does not disclose this. Instead, Kato discloses a completely different structure. Although the structure is described throughout the Kato specification, the description of that structure is shown in very simple form in Fig. 1. The Applicants therefore invite the Examiner’s attention to Fig. 1 and particularly to Column 3, lines 59 – 63, which describes Fig. 1. In that regard, Fig. 1 is described as and shows ultra-fine fiber bundles entangled with one another in the portion labeled “A” and ultra-fine fibers and fine bundles of ultra-fine fibers branched from the ultra-fine fiber bundles that are entangled with one another in the portion labeled “B.” In other words, the portion “A” contains bundles of ultra-fine fibers entangled with other bundles of ultra-fine fibers. Hence, the bundles are entangled with other bundles. In sharp contrast, however, those bundles that are entangled with other bundles are not entangled with individual ultra-fine fibers.

The portion labeled “B” contains a limited amount of entangled ultra-fine fibers from the bundles in the nonwoven fabric. In other words, only the surface portion of the nonwoven fabric has some degree of ultra-fine fibers entangled with other ultra-fine fibers.

Referring back to Claim 39, however, it can be seen that Claim 39 recites that substantially all of the ultra-fine fibers in the artificial leather sheet are entangled with other ultra-fine fibers. They are not entangled with other bundles and bundles are not entangled with other bundles as is the case in the majority of the nonwoven fabric of Kato, as shown in the portion labeled "A."

The remainder of the Kato specification confirms this basic structure, such as in the first full paragraph of Column 3 and in various of the Examples. In that regard, the Applicants invite the Examiner's attention to Example 1, wherein Kato teaches that individual fibers were bonded with each other to form fiber bundles as recited in Column 12 at lines 17 – 19. Those bundles were then formed into a tow which was then subjected to needle-punching. Example 2 provides further descriptions of bonded fiber bundles in Column 12 at line 65.

Then, referring to Example 3 in Column 13, 16 ultra-fine fibers were formed into a filament, i.e., a bundle. This is described at lines 18 and 19. The filaments were then needle-punched. Example 4 contains similar disclosure in Column 13 at lines 62 and 63, wherein extra-ultra-fine fibers were formed into a bundle, which was then subsequently needle-punched. The result of these teachings is that it becomes clear to those skilled in the art that a major portion of the Kato nonwoven fabric involves the entanglement of ultra-fine fiber-containing bundles with other bundles. However, this is essentially the opposite of what the Applicants claim, wherein they claim that substantially all of their ultra-fine fibers are entangled with other ultra-fine fibers, not bundles of ultra-fine fibers. The Applicants therefore respectfully submit that Kato fails to explicitly or implicitly disclose at least one specifically claimed aspect of Claim 39, wherein the artificial leather sheet contains ultra-fine fibers at least substantially all of which are entangled with each other.

There is another problem with Kato. The rejection states in paragraph 4 that Kato suggests the use of polyurethane elastomer as optional (Col. 5, lines 24-30). The Applicants agree that in that

sentence, Kato describes this. However, Kato does not disclose an artificial leather sheet which does not contain polyurethane elastomer. The Applicants invite the Examiner's attention to Examples 5 and 8 of Kato. Column 16, lines 7 – 12 and Column 19, lines 5 – 10 disclose that polyurethane elastomer was applied to the nonwoven fabric. Reading those Examples reveals that Kato calls fabric before application of polyurethane elastomer "nonwoven fabric" and calls fabric after application of polyurethane elastomer "leather-like sheet." Thus, despite the description in Column 5, lines 24 – 30, when taken in appropriate context, Kato only discloses an artificial leather sheet which contains polyurethane elastomer and does not disclose artificial leather sheet which does not contain polyurethane elastomer. On the other hand, the artificial leather sheet of Claim 29 is only different from a nonwoven fabric at the point that the artificial leather is dyed. Thus, yet another fundamental premise of the rejection is flawed. Withdrawal of the rejection is respectfully requested.

Claims 29 – 38 and 40 – 48 stand rejected under 35 U.S.C. §102 or, alternatively, under 35 U.S.C. §103 over Kato. The Applicants note with appreciation the Examiner's detailed comments hypothetically applying Kato against those claims. The references to inherency and MPEP 2112 are particularly noted. However, the Applicants respectfully submit that Kato fails to explicitly or implicitly disclose all of the subject matter in those claims and further fails to disclose, teach or suggest the subject matter of those claims. Reasons are set forth below.

Independent Claim 29 as well as independent Claim 40 recite that at least substantially all of the ultra-fine fibers are entangled with each other. The Applicants have already established with respect to Claim 39 that Kato does not explicitly or implicitly disclose a nonwoven fabric wherein at least substantially all of the ultra-fine fibers are entangled with each other. Instead, a major portion of the Kato nonwoven fabric entangles ultra-fine fiber-containing bundles with other ultra-fine fiber-containing bundles. Only the surface portions of the Kato nonwoven fibers contain ultra-fine fibers

entangled with one another. However, the Applicants exclude that type of disclosure in Claims 29 and 40 because the Applicants recite that at least substantially all of the ultra-fine fibers are entangled with each other.

There is another difference with respect to Claim 29. The claimed 10% modulus in the length direction of 8N/cm or more is not disclosed by Kato. Indeed, 10% modulus is a parameter which has high relationship with entanglement of fibers. To obtain the claimed range of 10% modulus, it is necessary to perform hydro-entanglement at a pressure of at least 10 MPa after forming at least substantially all of the ultra-fine fibers. The rejection states in paragraph 13 that in Example 4 of Kato, hydro-entangling under water pressure of 100 kg/cm^2 (9.8MPa) is disclosed (Col. 14, line 5). The Applicants agree. However, the hydro-entangling is performed before forming the ultra-fine fibers. In Example 4 of Kato, formation of ultra-fine fibers is performed after hydro-entangling (Col. 14, lines 55-57). It is important for the Applicants to perform hydro-entangling after forming the ultra-fine fibers or else substantially all of the ultra-fine fibers are not entangled. On the other hand, Example 1 of Kato discloses hydro-entangling after forming the ultra-fine fibers. However, the water pressure is 70 kg/cm^2 (about 7MPa). As described above, by hydro-entangling under water pressure of less than 10 MPa, the Applicants' fabric, which has 10% modulus of 8N/cm or more, cannot be obtained.

This is important. The property of 10% modulus being 8 N/cm or more means that a nonwoven fabric of Claim 29 is dense and hard. Such a nonwoven fabric provides better adaptability to processing and good quality leather-like sheet as described in paragraph [0041] of the Applicants' specification. In sharp contrast, Kato discloses a nonwoven fabric that is required to be flexible in Column 2, lines 11 – 18. Further, Kato states in Column 3, lines 37 – 42 that the entanglement of the fibers of the nonwoven fabric as a whole is very dense and mutual restriction of fiber movement

occurs so that the nonwoven fabric has insufficient flexibility. Thus, the fabrics of Kato and the Applicants lead in opposite directions concerning flexibility of a nonwoven sheet. The Applicants therefore respectfully submit that 35 U.S.C. §102 is inapplicable to Claims 29 – 38 and 40 – 48.

The Applicants respectfully submit that 35 U.S.C. §103 is also inapplicable. Naturally, inasmuch as Kato is assigned to the same assignee of this Application, it inherently follows that the Applicants proceeded in a very different direction than the Kato disclosure. The Applicants found that there is particular advantage to be gained by entangling substantially all of the ultra-fine fibers with each other, as opposed to having a major portion of the ultra-fine fiber bundles being entangled with other ultra-fine fiber bundles. Also, when that discovery is combined with the omission of an elastomer bonding agent, the Applicants discovered additional benefits which reflect themselves in the claimed tensile strength of 70 N/cm or more and tear strength of 3 to 50 N. This is particularly important inasmuch as Kato does not disclose the Applicants' claimed tensile strength and tear strength.

The rejection accounts for this failure of disclosure with respect to the tensile strength and the tear strength by invoking inherency as set forth in MPEP 2112. However, the Applicants respectfully submit that inherency cannot be established in this instance. That is because the Applicants' claimed nonwoven fabric is made in a critically different way relative to the Kato disclosure. As noted above, the Applicants employ a nonwoven fabric wherein substantially all of the ultra-fine fibers are entangled with other ultra-fine fibers as opposed to the Kato approach, which has a major portion of ultra-fine fiber bundles entangled with other ultra-fine fiber bundles. The amount of entanglement between ultra-fine fibers is deliberately quite limited in Kato. This is reflected in the Kato Examples.

The Applicants invite the Examiner's attention to Examples 1 – 3 and 11 as mentioned in the rejection. These Examples do not contain an elastomer bonding agent. Thus, that aspect is common with the Applicants' Claims 29 and 40. However, because Kato chose a different approach, the resulting nonwoven fabric is actually quite different. The Applicants also invite the Examiner's attention to Example 1 which, as noted above, employs fiber bundles that are ultimately entangled with one another. The result of that approach is a nonwoven fabric that has an apparent density of 0.19 g/cm^3 . Even after further treatment with a heated roller, the apparent density increases to 0.21 g/cm^3 . However, this is outside of the Applicants' claimed apparent density of 0.280 to 0.700 g/cm^3 .

Referring to Example 3, Kato again teaches bundling 16 ultra-fine fibers into a filament. The nonwoven fabric resulting from that needle-punching of filaments has an apparent density of 0.20 g/cm^3 . This is again substantially outside of the Applicants' claimed minimum apparent density of 0.280 .

What does this mean? The requirement to demonstrate the inherency of the Applicants' claimed tensile strength and tear strength is very high in accordance with MPEP 2112. In particular, MPEP 2112 requires that the claimed characteristics, the tensile strength and tear strength in this instance, must be "necessarily" present. It is not enough that the claimed physical characteristics might be present, could be present or are even likely present. The physical characteristics must necessarily be present.

The Applicants have factually demonstrated by referring to Kato that, in the embodiments in Kato not employing an elastomer bonding agent, there is an impact on the physical characteristics as disclosed by Kato with respect to apparent density. Those apparent densities are outside of the Applicants' claimed range and one skilled in the art could reasonably expect that, if the apparent density is different, the tensile strengths and tear strengths could very well be different. Thus, one

skilled in the art can conclude that utilization of a nonwoven fabric that entangles bundles with other bundles has a direct impact on the apparent density, tensile strength and tear strength as compared to the Applicants' nonwoven fabric, wherein substantially all of the ultra-fine fibers are entangled with other ultra-fine fibers, not with ultra-fine fiber bundles.

This means that the very high burden set by MPEP 2112 has not been met in this case. The Applicants have demonstrated by referring to specific locations in Kato that one skilled in the art would have a reasonable expectation that the Applicants' claimed tensile strength and tear strength could very well likely be different from those of the Kato nonwoven fabrics. Moreover, Kato factually demonstrates that, when no elastomer is used, the apparent densities of the Kato nonwoven fabrics are also outside of the Applicants' claimed range. The Applicants respectfully submit that this is compelling factual evidence that the Applicants' claimed tensile strength and tear strength ranges are not inherently present or obvious over the disclosure of Kato. Withdrawal of the rejection is respectfully requested.

Claims 47 – 48 stand rejected under 35 U.S.C. § 103 over the hypothetical combination of Katayama with Kato. The Applicants respectfully submit that Katayama fails to cure the deficiencies set forth above with respect to Kato. Therefore, hypothetically combining Katayama with Kato would still result in a nonwoven fabric with a substantial portion including entangled ultra-fine fiber bundles entangled with other ultra-fine fiber bundles and not at least substantially all of the ultra-fine fibers being entangled with other ultra-fine fibers. Moreover, that combination would not result in the Applicants' claimed apparent density, tensile strength and tear strength. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



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